GEODE FACT SHEET

Distribution System Operators Transforming the Customer Experience

Introduction

The traditional roles in the electricity market of producers, distributors and retailers are all evolving due to new technology, new regulatory frameworks and new customer needs. As a consequence, the relationship between the Distribution System Operator (DSO) and its electricity customers is also changing: smart meter deployment and electronic invoicing are increasing, and the nature of the issues and questions raised by customers is shifting towards more technical questions, such as how to connect to the grid, how to install electric vehicle charging points and solar panels. Only the DSO can facilitate the connection of the customer's new technology to the grid and needs to communicate with the customer on these practical and technical issues.

Still, despite the increased importance of DSOs in a more decentralised energy system, DSOs often remain an unseen actor. GEODE believes this has to change.

This GEODE Fact Sheet is based on the GEODE report **DSOs Transforming the Customer Experience**, published in May 2019. The report discusses **how DSOs communicate with customers in a customer centric manner and enhance DSOs' relationship with their electricity customers on grid related issues.**

POLICY & REGULATORY RECOMMENDATIONS

- DSOs should strive to further facilitate customers' increasingly active role in the energy market as a trustworthy and reliable partner for technical advice and support on grid related issues.
- DSOs should enable customers to become more flexible in their use of energy, thereby ensuring the energy systems work at optimum efficiency.
- DSOs should be visible to the customer and must be allowed and able to communicate effectively with their customers
- National Regulatory Authorities have to provide a regulatory framework which ensures that price signals in the network tariff reach the customer and are well understood, regardless of the market model in place (e.g. supplier centric model).

The DSO a trustworthy & reliable partner in a rapidly changing energy system

In the increasingly decentralised energy system, a new type of consumer – the prosumer – has evolved. Prosumers can be both a single customer with solar panels on his/her roof, and a community of customers organized in an Energy Community. Its needs differ from traditional customer needs, at times feeding excess electricity into the grid and at other times demanding it from the grid. In both cases, there must be an uninterrupted connection to the grid which only the DSO can provide.

At the same time, the DSO is becoming an active neutral market facilitator for demand response services, flexibility, energy storage and production from distributed energy resources, as customers have an increasingly diverse number of choices, solutions and needs in generation and demand, requiring more and specific technical advice and guidance from the DSO in terms of the connection and the grid capacity. DSOs enable these new developments from a technical standpoint and guide the customer to find the best solutions for them and for an efficient grid operation, as a trusted and reliable partner.

To best serve their customers, DSOs need to raise their public profile (role and tasks) and be encouraged to communicate effectively with their consumers.

From passive to proactive communication between the DSO and its customers

The DSO should provide up-to-date information and inform customers proactively using their preferred method of communication (e.g. e-mail, SMS or smartphone notifications). Typical examples would cover scheduled interruption of supply, usage of grid flexibilities, or even (unplanned) outage, as a line fault.

Connecting the customer to the grid – ensuring that customers see the benefits and convenience of being connected to the grid

DSOs should always proactively establish an open dialogue on grid related issues with those planning to connect to the grid, install solar panels, storage devices or charging stations for electric vehicles. It should also forecast the customer's information needs and approach the customer with tailor-made technical information about their future needs. Then, together with the customer, the DSO should connect all their assets to the grid, clearly communicating the requirements for connection and the defined costs. To achieve this, it is crucial that DSOs are involved at an early planning stage in the development of new activities by the customers.

Guiding the customer through grid tariffs

An increasing number of countries are introducing capacity-based tariffs to give the customer an appropriate price signal, facilitating customers' participation in demand response activities and hence potentially reducing their own costs when responding to price signals and shifting consumption away from peak hours. Explaining and applying such complex matters requires

an easily understood tariff structure, clear language and straightforward customer-DSO communications, including ensuring that market price signals reach the customer and are well understood. If capacity grid tariffs are implemented in a supplier centric model, regulators have to provide a framework which ensures that suppliers pass the capacity signal including the appropriate grid tariff on to the customer.

Information about the best grid tariff options available should be simple and clear, to facilitate more cost-efficient behaviour from the customer.

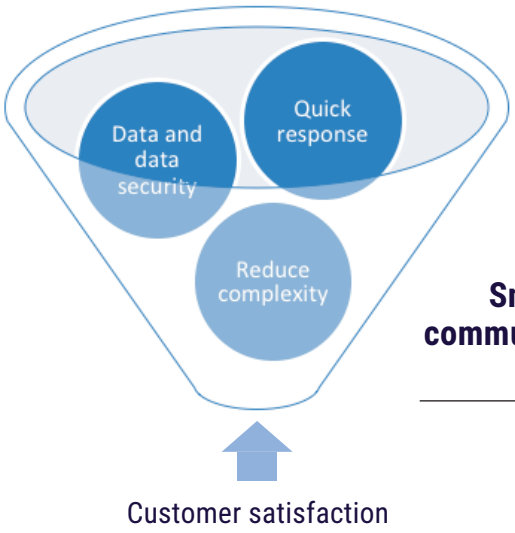
The smart DSO building trust

Ensuring security of supply and proper maintenance of the power grid is and always will be the DSO's raison d'être.

Given the nature of its role in the energy system, the DSO is in a position to actively create greater value for the connected customer. In a nutshell, the smart DSO builds trust and is a reliable partner for the customer, as a part of everyday life, helping them, reducing complexity, providing anticipated and quick grid response times (e.g. in case of outages) and high data security standards in the world of big data.

DSOs are operating helpdesks both with physical customer service call centres as well as chat services with Artificial Intelligence agents providing automated answers to customer requests. Customers also increasingly contact their DSO online or through smartphone applications.

Smart metering systems will help ensure that DSOs provide accurate data for billing and report on customers' exact consumption data, making it easier to understand how much energy is consumed and what for, facilitating customers' use of their smart appliances and enabling them to benefit from demand response services.



Smart DSO communication tool box

In an increasingly digitalised electricity system, protection of customer data has become a core task for the DSO as well as making data accessible to third party actors, only with customer consent, whilst always ensuring data privacy and full compliance with the General Data Protection Regulation (GDPR). By doing so, DSOs can facilitate retailers, aggregators or other energy service providers provision of smart services to their customers.

With customer satisfaction being a key priority for DSOs, it is crucially important for the DSOs to provide 24/7 accessibility for customer enquiries (wherever possible such as outage information).

ANNEX
Best practice examples from GEODE members

Hafslund Nett, Outage information Norway

The **DSO's company app** has a map that shows where in the distribution grid area there are outages. Customers also receive an SMS on outages in their home, the expected time needed to restore power, and when the electricity is back on. The app also includes information on what to do when the light goes off, e.g. "Check if the neighbour still has power", etc. This is to keep the customer fully informed and helps customers avoid having to make calls.

Outage information Finland

The DSOs in Finland use a **free SMS service to inform customers about outages and their estimated duration.** The DSO sends the customer an SMS free of charge if there is an interruption at the customer's consumption site. This has been found very useful especially for customers with multiple consumption sites, e.g. summerhouse owners. Most DSOs also have a power outage map, which provides customers with real time information on outage areas in the network and, particularly useful, with the DSO's estimation of outage end time.

"Elsmart" Norway

A system for communications between electricians and the DSO. It is a good example of how to improve the customer's connection process.

See link (only in Norwegian):
https://www.powel.com/no/about/produktinfo/powel-elsmart/

Hafslund Nett Norway

The grid company has established a marketing team that travels around to talk to different groups of customers advising them on how to best connect EV charging infrastructure and how much capacity will be needed, the connection of new installations, regulation for prosumers and much more. The company believes that this proactive information will be useful for the customer.

Larger commercial customers usually have personal contacts in the grid company they can call for information and advice.

"Elsmart" Norway

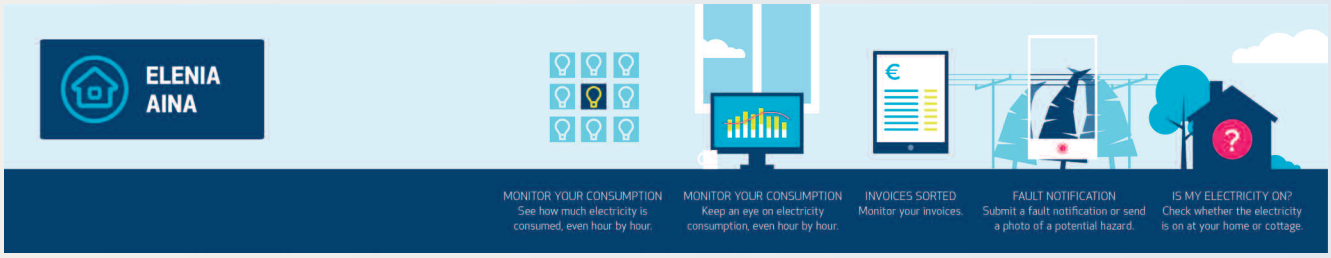
The grid company has reached out to some larger customers offering them advice on their grid tariffs and how to better react to the capacity signals from the DSO.

Agder Energi Norway

Making their presence known in the form of visiting customers in person - this is possible for local distributors as they are physically close to the customer - for instance in times of outages caused by extreme weather conditions.

Elenia Oy
Finland

All Finnish customers have Smart Meters since 2014. In 2013 Elenia Oy launched a mobile app "Elenia Mukana" as a new service channel. Via this mobile app Elenia's customers can follow their electricity consumption in kWh and €. The app provides the status of power to their premises. Customers can send the DSO pictures of potential faults with the precise location information.



In 2015 **Elenia**[1] **Aina** was launched as a service provided to the customer by the DSO. Elenia Aina is a digital customer service channel which monitors hourly electricity consumption amongst other things.

https://www.elenia.fi/aina

[1] Elenia is a Finnish DSO that is ownership unbundled

Tekniska Verken i Linköping
Sweden - "My Pages"

The DSO provides the customer detailed statistics for their electricity usage, which are then exportable to other analysis programs etc.

Hafslund Nett Norway

All customers have smart meters installed. Through the **DSO's company app** the customer gets information on their hourly, monthly and annual consumption and can compare this historical data. Hafslund Nett has employed four students to improve this app and explain invoices to customers. This is because "high-tech" industries need help to speak in a language that their customers understand.

See link here (in Norwegian) about how Hafslund Nett explains the electricity bill to customers through the app:

https://www.mynewsdesk.com/no/hafslund-nett/news/studenter-lager-app-som-forklarer-stroemregningen-din-353955

Energy consumption reporting – case Finland

DSOs provide advanced energy consumption information to their customers using smart metering data. This information can be communicated to the customer through many channels such as the web, smartphones and in-home displays. One example of this kind of service is the **mandatory DSO web-portal.**

This portal can be accessed by the customer via internet or a smart phone. The portal is protected by a customer specific password.

Example of a portal from a Finnish DSO

Energy Networks Association, UK - 105 Single Emergency Number, (SEN)

In March 2014, Energy Networks Association (ENA) was charged by the Department of Business, Energy and Industrial Strategy (BEIS) to deliver a single emergency number (SEN) for use in England, Wales and Scotland, on behalf of all electricity Network Operators, for the general public to be able to contact their electricity Network Operator in case of a power cut. Since then Network Operators continue to advance consumer awareness and promotion of the 105 service by embedding 105 branding into existing marketing channels as well as through a variety of campaigns including TV, radio and digital advertising.

The 105 Single Emergency Number supports customer service by providing a quick, easy and memorable number for the public to use to connect to their local Network Operator. This allows Network Operators to quickly respond to issues concerning a power cut, electricity network safety event or other grid supply issues and helps to reduce the response time to restore power to homes and businesses.

Implementation of a decentralised data platform (EDA) in Austria

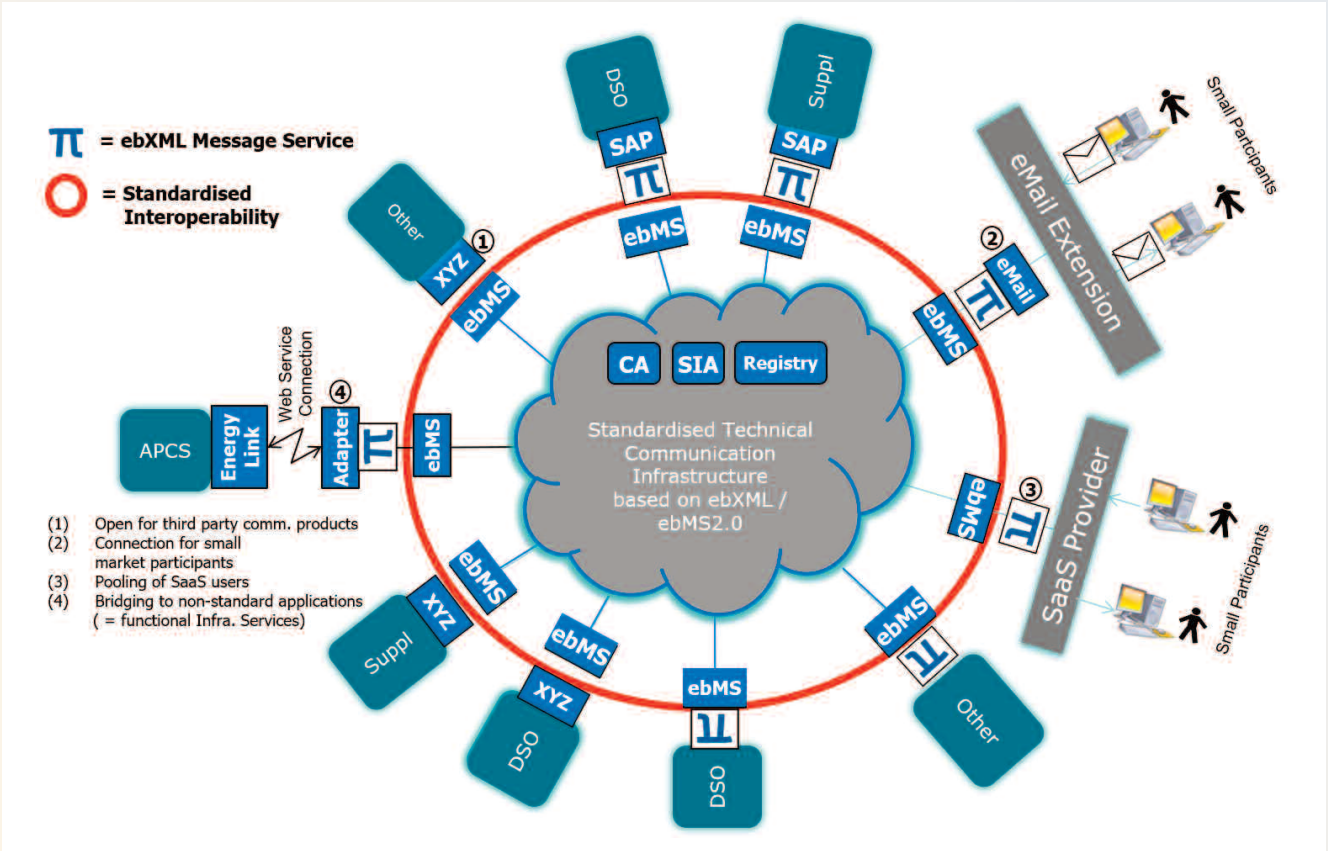
The founding of a jont company "EDA Energiewirtschaftlicher Datenaustausch GmbH" is currently taking place. Partners: GEODE member Wiener Netze and 14 well-known DSOs in Austria.

EDA is a decentralised data exchange infrastructure that is used for business processes across the entire Austrian energy sector. The activity started in 2012 by standardising document formats, business processes and the data communication protocol for the supplier switching process. Over time, several further processes have been carried out over the EDA infrastructure: exchange of electronic invoices, meter data exchange, exchange of administrative data for the sharing of renewable energy between landlords and tenents, as well as the data exchange for offering and activating flexibility in the power grids.

Austria chose a decentralised and cost-efficient way: Consequently standardise each and every aspect of data exchange, including public key infrastructure, on-the-fly XML scheme validation of business documents, exchange of participant profiles through a registry etc.

The data exchange between the DSOs as well as the market participants is made without discrimination and complies with the requirements of the GDPR and is applicable with the regulatory requirements.

Technology reference:
https://www.ponton.de/b2b-integration/eda/



Source: https://www.ponton.de/b2b-integration/eda/